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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Amy Hundhausen

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EXAMINER

KOSTAK, VICTOR R

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/784,863	Applicant(s) HUNDHAUSEN ET AL.	
	Examiner Victor R. Kostak	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 17 and 21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/23/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 8, 14 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "high" in claim 7 and "very high" in claims 14 and 15 are relative terms which render the claims indefinite. The terms "high" and "very high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

What one skilled artisan considers being a "high" and "very high" speed clock signal can readily differ from what another skilled artisan may think.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 10, 11, 14-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruo et al. in view of Easley et al. (6259,482) in view of Maruo et al. (7,146,007).

Easley (noting particularly Figs. 5 and 6) discloses a digital BTSC encoder applied to left and right audio signals (as shown), having a bandwidth defined by the frequency content of the signals (noting the spectrum in Fig. 1). Included is a digital output modulator supplied by the BTSC coder, wherein both are implemented on a common substrate (i.e. single digital chip: col. 22 lines 20-23). Easley points out that the encoder/modulator is adequate for various in-home consumer electronics applications (col. 22 lines 43-45).

Maruo also discloses a BTSC processing on a single chip (col. 6 lines 28-30: noting particularly Figs. 3A, 3B), and discloses that it can be formed in a set-top box (col. 7 lines 48-50; Figs. 4A-4C), which readily qualifies as an in-home consumer appliance, the A/V ultimately being sent to a television for A/V reproduction that is off-chip.

In view of the open-ended allowance by Easley of an in-home appliance, and the example of the STB given by Mauro, it would have been obvious to provide the single-chip BTSC encoder/modulator of Easley in the STB of Mauro, the common-chip design providing more compact design, thereby meeting claim 1.

As for claim 11, both Easley (col. 22 line 26) and Maruo (e.g. Fig 3A, 3B) disclose associated video processing. Maruo discloses the A/V processor 340 and additional processor 345 being on a single chip (col. 6 lines 28-30), and the audio processor and modulator of Easley also being on a common chip (as noted above). It would have been obvious to use a common chip for the processors for the known benefit of making the hardware more compact.

As for claim 19, the initial audio signal is received by the BTSC standard encoder as left and right component signals. Easley uses FM modulation involving the horizontal line frequency of the video signal (e.g. Fig. 5), the sampling rate being converted to generate the

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modulated composite signal (Easley shows typical BTSC audio/video coding/modulation. Such would be constructed in the in-home appliance allowed by Easley (such as a set-top box as disclosed by Mauro), wherein the modulated signal would be received for reproduction by the off-chip device, such as a television.

Regarding claim 10, processing is done by the STB of Maruo for ultimately providing A/V programming for presentation on an end device, such as a television.

Regarding claims 14 and 15, it is noted that the digital data (both the audio and video) must be converted from digital to analog for reproduction. Such is shown by Maruo in stage 350 (the DAC not numerically labeled), its clock (RTC shown in Fig. 4C) operating at one of ordinary skill in the art can consider at a very high speed. That clock also provides timing to the other stages including block 340 and the elements in block 350, which include the transfer of the A/V data to the DAC at respective rates, all of which is controlled by CPU 430 (Fig. 4C).

As for claim 16, the set-top box of Mauro includes the typical associated processing elements required to disassemble and decode the A/V signal received by the STB, including IF tuner with demodulation, video decoding and transport processing elements, digital audio processing, BTSC decoding, and audio DAC (note the elements in block 310 in Fig. 4A, and the MPEG and audio DAC in Fig. 4B).

4. Claims 2, 4, 6-8, 12, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Easley and Maruo, in view of Hanna (5,796,842).

Hanna also discloses digital BTSC coding of the left and right signals and points out that the sampling rate must set very high in order to match the characteristic of analog filtering, resulting in phase and amplitude matching involving (col. 6 lines 18-35).

In view of this consideration, it would have been obvious to one of ordinary skill in the art to ensure that the digital form of the BTSC signals of Easley/Maruo be generated such that the sampling be at an adequately increased rate, and ten times the bandwidth of the signal pair would provide such, thereby meeting claims 2 and 18.

As for claim 4, the initial audio signal is received by the BTSC standard encoder as left and right component signals. Easley uses FM modulation involving the horizontal line frequency of the video signal (e.g. Fig. 5), the sampling rate being converted to generate the modulated composite signal (Easley shows typical BTSC audio/video coding/modulation. Such would be constructed in the in-home appliance allowed by Easley (such as a set-top box as disclosed by Mauro), wherein the modulated signal would be received for reproduction by the off-chip device, such as a television.

As for claims 6 and 7, it is noted that the digital data (both the audio and video) must be converted from digital to analog for reproduction. Such is shown by Maruo in stage 350 (the DAC not numerically labeled), its clock (RTC shown in Fig. 4C) operating at one of ordinary skill in the art can consider at a very high speed. That clock also provides timing to the other stages including block 340 and the elements in block 350, which include the transfer of the A/V data to the DAC at respective rates, all of which is controlled by CPU 430 (Fig. 4C), discussed previously.

Regarding claim 8, note Fig. 10 of Hanna depicting the phase relationship between the two signal components.

As for claim 12, Hanna also discloses digital BTSC coding of the sum and difference channels, pointing out that the sampling rate must set very high in order to match the characteristic of analog filtering, resulting in phase and amplitude matching involving (col. 6 lines 18-35).

5. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Easley and Maruo, in view of Peiffer (2003/0131350) or Frederiksen (4,922,537).

As for claims 5 and 13, it would have been obvious to one of ordinary skill in the art to receive the audio for BTSC encoding from any suitable source, such as that where the audio could initially in PCM format, as is disclosed by Peiffer (section [0044]) or Frederiksen (col. 6 lines 1-3), who both acknowledge such is well known in the television environment.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Easley and Maruo, in view of Jaffe (2003/0197810).

It would also have been obvious to any well known composition for the substrate, such as CMOS, as is disclosed by Jaffe (section [[019]], who also puts a BTSC processor on a single chip (again section [0019]).

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Easley and Maruo, in view of Bestler et al. (5,638,112).

As discussed above, the A/V processing is done by the STB of Maruo for ultimately providing A/V programming for presentation on an end device, such as a television. It would have been obvious to one of ordinary skill in the art to have the A/V signal modulated on the standard 3/4 modulation typically of cable set-top distribution, as is shown by Bestler (stage 56 in the sole Figure).

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Easley, Maruo, and Hanna, in view of Bestler et al.

Again, it would have been obvious to one of ordinary skill in the art to have the A/V signal modulated on the standard 3/4 modulation typically of cable set-top distribution, as is shown by Bestler (stage 56 in the sole Figure).

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Claims 17 and 21 appear allowable over the prior art.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor R. Kostak whose telephone number is (571) 272-7348.

The examiner can normally be reached on Monday - Friday from 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh W. Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, Virginia 22313-1450

Or faxed to:

(571) 273-8300

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office whose telephone number is (703) 308-HELP.

/Victor R. Kostak/
Primary Examiner
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